

# Installation Instructions

**NOTE:** Read the entire instruction manual before starting the install.

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## INTRODUCTION

Congratulations for selecting the Perfect Air™ Air Purifier for your home comfort system! The Perfect Air™ Air Purifier is proven to remove and kill airborne germs and allergens, including viruses, bacteria, and mold spores. The Perfect Air™ Air Purifier is a cornerstone of Bryant's Healthy Home Solutions for providing healthier, cleaner air in your home.

## HOW IT WORKS

The Perfect Air™ Air Purifier provides extremely high filtration performance while killing captured contaminants, including viruses, bacteria, and mold spores. The Perfect Air™ Air Purifier treats the entire air-stream through a state of the art, three-stage process, exclusive to Bryant.

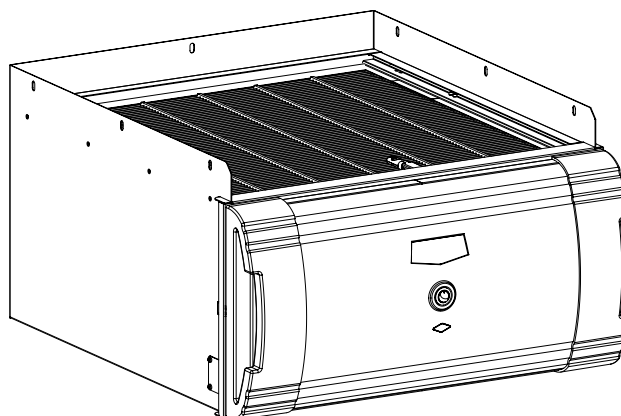
In stage one, the particles are electrically charged by a precision-point ionization array as they enter the Perfect Air™ Air Purifier.

In stage two, the charged particles are electrically attracted to the air purification cartridge, which is located within an electric field.

In stage three, captured particles are killed by electrical current flow and ion bombardment.

The Perfect Air™ Air Purifier is CSA certified for shock and electrical fire hazard only.

La Perfect Air™ Air Purifier certification CSA vise uniquement les risques de choc électrique et.



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**Fig. 1 – GAPAB Unit**

## SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock or other conditions which may cause personal injury or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses and work gloves. Have a fire extinguisher available. Read these instructions thoroughly and follow all warning or cautions attached to the unit. Consult local building codes and National Electrical Code (NEC) for special requirements.

It is important to recognize safety information. This is the safety-alert symbol ⚠. When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury. Understand the signal words DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **may** result in personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.



## CAUTION

### PERSONAL INJURY HAZARD

Failure to follow this caution may result in personal injury.

Ozone in concentrations above 0.05 PPM may be hazardous to health.

Des concentrations d'ozone superieures a 0.05 PPM peuvent etre nocives pour la sante.

## APPLICATION CONSIDERATIONS

The Perfect Air™ Air Purifier is designed for use in the return air duct of a forced air heating, cooling, and ventilation system. Models GAPABXBB1620, GAPABXBB2020 and GAPABXBB2420 are specifically designed for use in systems with a fan coil.

### Air Conditioning

The Perfect Air™ Air Purifier should be installed in a system so that all the return air is circulated through the air purifier. It should be located upstream of the fan coil. This will help keep the fan coil clean and prevent condensation from forming within the Perfect Air™ Air Purifier.

### Humidifiers

An evaporative humidifier can be mounted upstream of the Perfect Air™ Air Purifier. It is best to install atomizing humidifiers downstream of the air purifier because hard water salt deposits and water droplets may damage the air purifier. If an atomizing humidifier must be mounted upstream of the Perfect Air™ Air Purifier, it should be mounted as far upstream as possible (at least 6 ft. recommended), and a standard disposable furnace filter should be mounted between the humidifier and the air purifier to trap hard water salt deposits and water droplets.

### Transitions

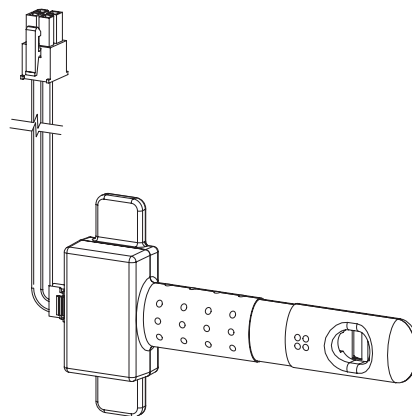
If the return air duct or fan coil openings do not fit the Perfect Air™ Air Purifier cabinet openings, gradual transitions are recommended to reduce air turbulence and maximize efficiency. No more than 20 degrees (about 4 in. per running ft.) of expansion should be used on each side of the transition fitting.

### Turning Vanes

If the Perfect Air™ Air Purifier is installed adjacent to a 90 degree duct elbow, turning vanes should be added inside duct to improve air distribution across the face of the air purifier.

### Electrical Power / Air Flow Sensor

The Perfect Air™ Air Purifier should only be powered when airflow is present. This model is designed for use with a fan coil and is equipped with an air flow sensor which provides power only when the fan coil blower is operating (See Fig. 2). Perfect Air™ Air Purifier models GAPABXBB1620, GAPABXBB2020, and GAPABXBB2420 are designed to be powered from a 208/230 VAC power source.



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Fig. 2 – Air Flow Sensor

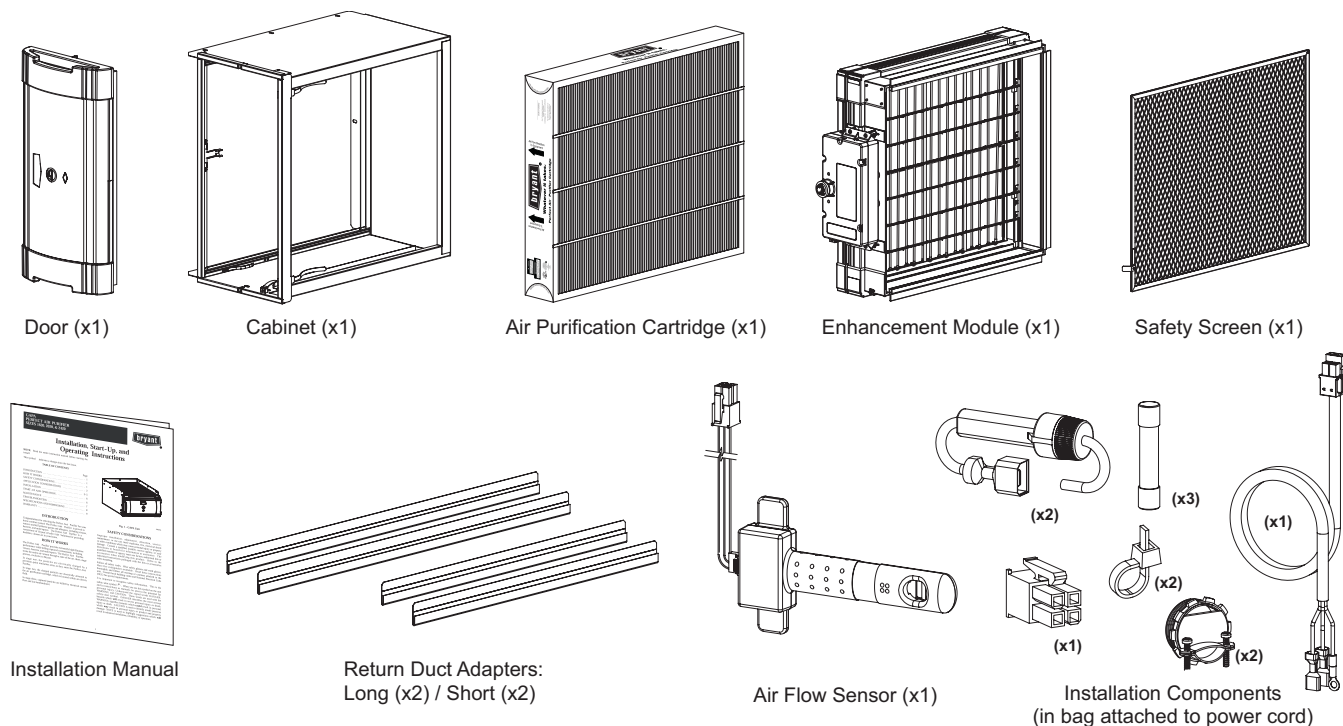


Fig. 3 – Perfect Air™ Air Purifier Components

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## INSTALLATION

### Step 1 —Check Perfect Air™ Air Purifier Components

#### ⚠ CAUTION

##### CUT HAZARD

Failure to follow this caution may result in personal injury. Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing and gloves when handling parts.

- Carefully remove all items from the box.

### Step 2 —Identify Mounting Location

- Identify a mounting orientation for the Perfect Air™ Air Purifier in the return air duct (see Fig. 4).
- Ensure airflow direction through the Perfect Air™ Air Purifier matches the arrows on the face of the air purifier cartridge. The Perfect Air Air Purifier or door can be rotated 180° to accommodate the cabinet orientation.
- The location of the Perfect Air™ Air Purifier should be readily accessible. Enough room should be provided for periodic replacement of the air purifier cartridges.



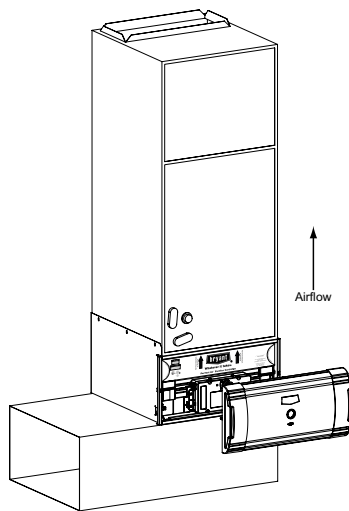
## WARNING

### ELECTRICAL SHOCK AND UNIT DAMAGE HAZARD

Failure to follow this warning could result in personal injury or death.

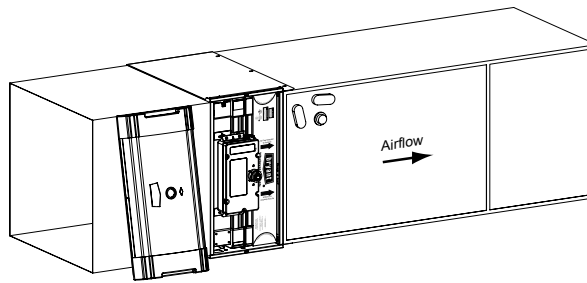
Only a trained, experienced service person should install the Perfect Air™ Air Purifier. A thorough check of the unit installation should be completed before unit operation. Before performing installation, service or maintenance operations on unit, turn off all power to unit. Tag disconnect switch with lockout tag.

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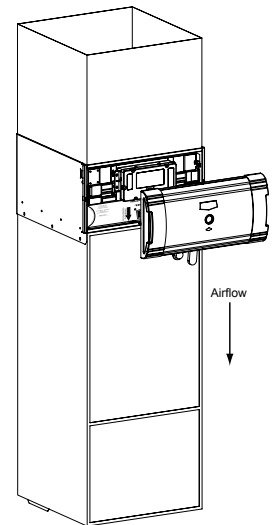
Upflow

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Horizontal

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Downflow

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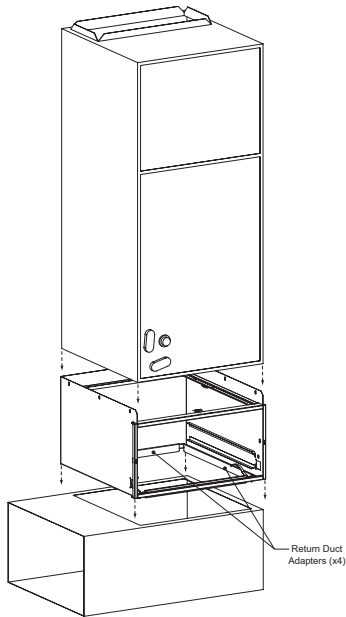
Fig. 4 – Perfect Air™ Air Purifier Cabinet Orientation

**Step 3 —Mount Cabinet**

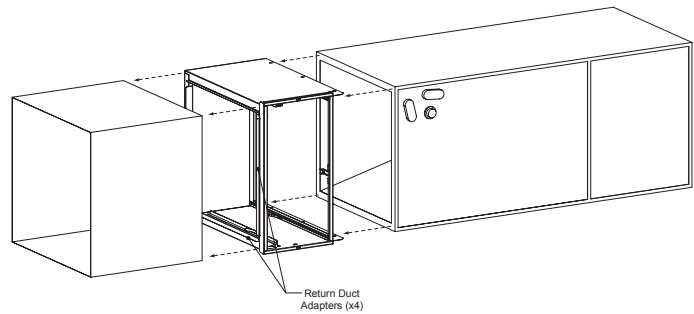
- Turn off power to the heating and cooling system.
- Remove the existing fan coil filter and discard. Excessive system static pressure may result if the Perfect Air™ Air Purifier is used with other filtration devices.
- Remove the air purifier cartridge and enhancement module from the Perfect Air™ Air Purifier cabinet.
- Position the cabinet between the fan coil and return air duct (see Fig. 4 and 5). A transition duct may be required.

**NOTE:** The fan coil cabinet screws holding the filter rack should be used to attach the air purifier cabinet.

- Gasket tape between the fan coil and the air purifier cabinet is already factory installed.
- Mounting holes are provided for fan coil attachment.
- Use return duct adapters provided to attach return ductwork (See Fig. 6).
- Seal seams with tape or caulking after the Perfect Air™ Air Purifier cabinet has been secured.

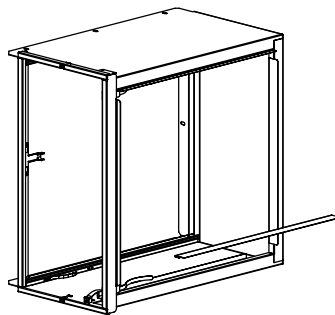


Mounting Cabinet Vertical



Mounting Cabinet Horizontal

**Fig. 5 – Mounting Perfect Air™ Air Purifier Cabinet for Fan Coils**



**Fig. 6 – Use of Return Duct Adapters**

**WARNING****ELECTRICAL SHOCK AND HIGH VOLTAGE HAZARD**

Failure to follow this warning could result in personal injury or death.

Before installing or servicing system, always turn off main power to system. There may be more than 1 disconnect switch.

**CAUTION****UNIT DAMAGE HAZARD**

Failure to follow this caution may result in equipment damage.

Cabinets will support a maximum weight of 400 lbs when installed beneath a vertical fan coil or air-handling unit. When setting fan coil on cabinet, do not drop it into place. Position the fan coil correctly on the cabinet to prevent a corner from slipping down and damaging the cabinet or its components.

#### Step 4 —Wiring

- Ensure power has been removed from the heating and cooling system.
- Turn the Perfect Air™ Air Purifier power switch off.
- Connect the power cord and the flow sensor cord to the power supply connector and the flow sensor connector (see Fig. 7 and Fig. 8).

**NOTE:** The power cord can be routed through the opposite side of the cabinet. Zip ties have been enclosed to secure the power cord to the side of the power supply.

**NOTE:** Cable connector and block-off plates will need to be removed and re-installed if the power cord is re-routed. Screws on the cable connector clamp should be tightened to 9 in. - lbs. torque.

**NOTE:** The Perfect Air™ Air Purifier is to be powered by 208/230Vac/60 Hz.

**NOTE:** The Perfect Air™ Air Purifier should only be powered when airflow is present. An airflow sensor is factory-installed (See Fig. 2 and Fig. 11). In order to bypass the airflow sensor, use the special bypass jumper included in the parts bag. With the bypass jumper in place, the air purifier will be on at all times when connected to electrical line power (see Fig. 10).

- Attach the quick connect terminals to the fused power connector leads (in parts bag attached to power cord) and connect to incoming field power. Attach the ground ring to fan coil chassis ground. (See Fig. 10.)

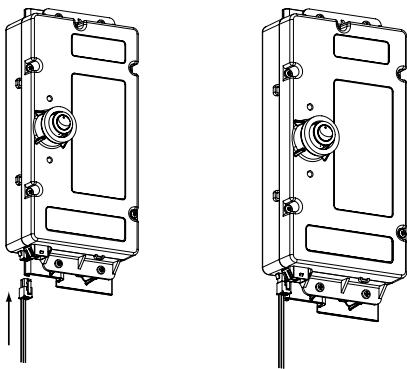


Fig. 7 – Flow Sensor Cable Installed

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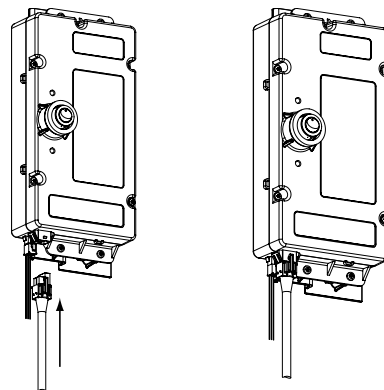


Fig. 8 – Power Cord Installed

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## NOTICE

**AIR FLOW SENSOR CABLE OR AIR FLOW SENSOR BYPASS PLUG MUST BE CONNECTED TO THE POWER SUPPLY IN ORDER TO ACTIVATE THE AIR PURIFIER**

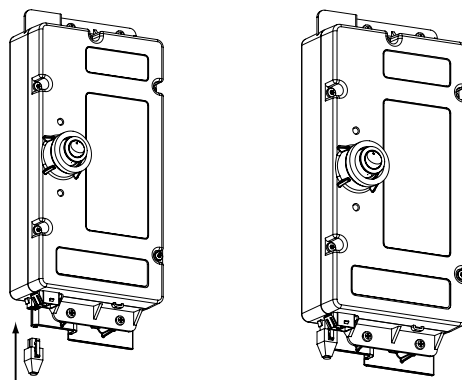


Fig. 9 – Airflow Sensor Bypass Plug Installed

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## WARNING

### ELECTRICAL SHOCK AND HIGH VOLTAGE HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing or servicing system, always turn off main power to system. There may be more than 1 disconnect switch.



## CAUTION

### EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

This unit cannot be powered directly from blower motor leads. Do not wire directly to blower motor. Wiring to blower motor will damage power supply and void warranty.

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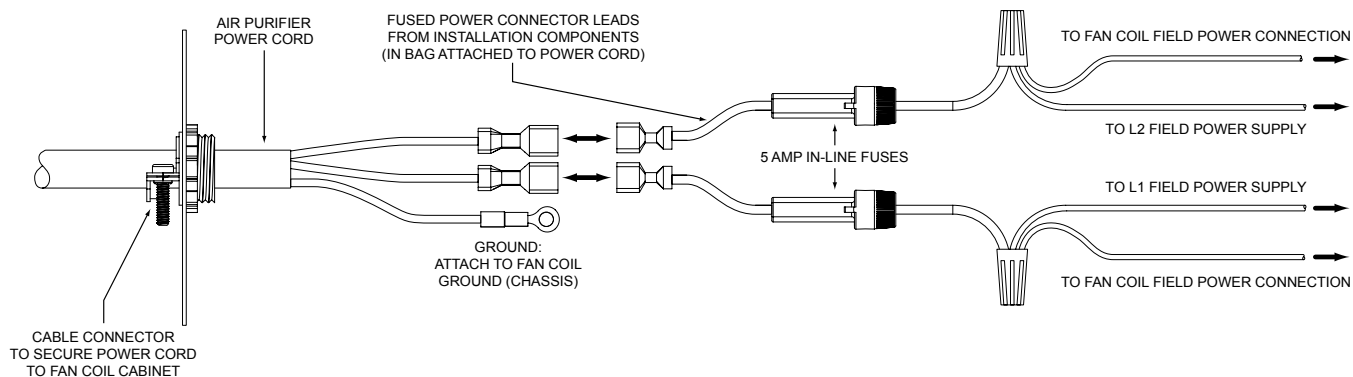
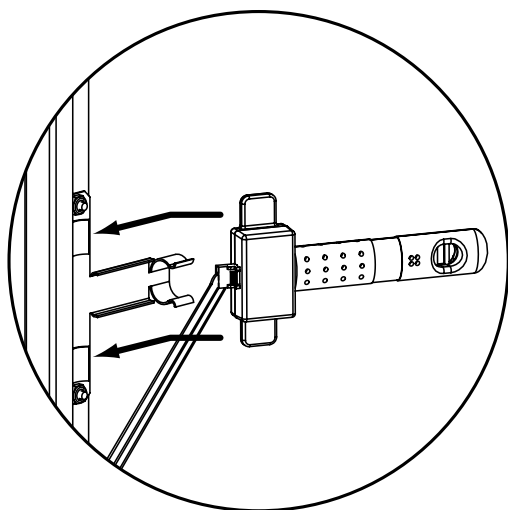
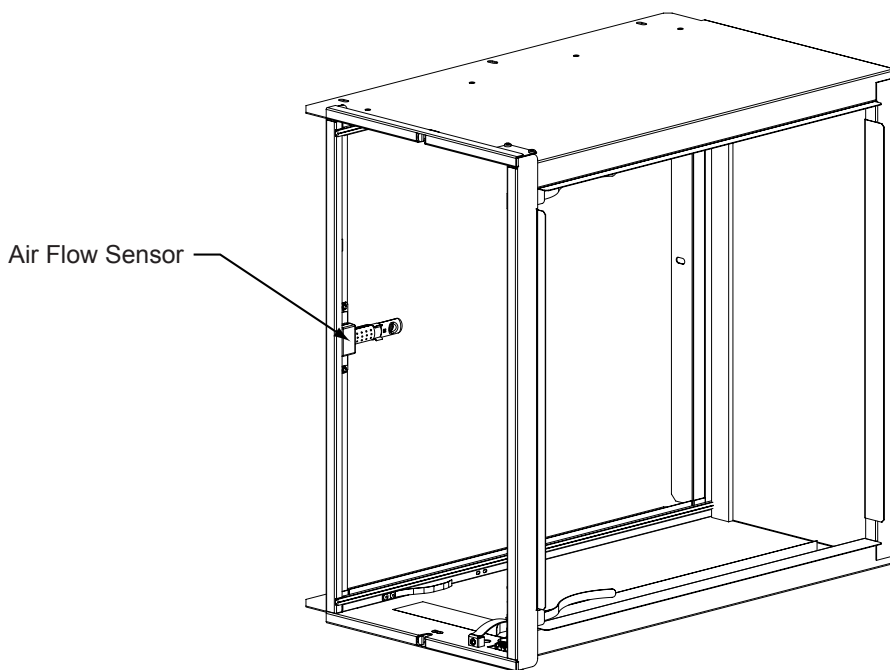
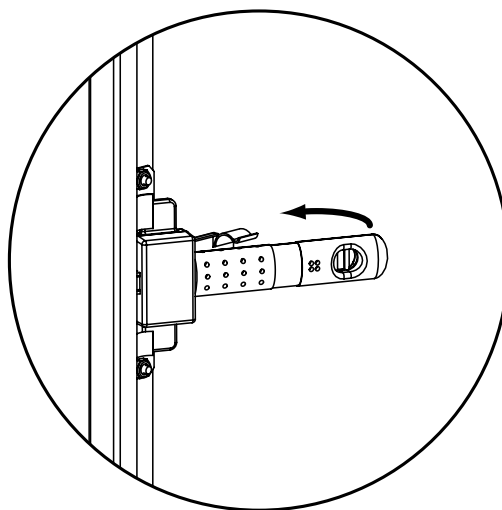


Fig. 10 – Fan Coil Chassis Ground

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1) Slide flow sensor tabs into support bracket



2) Rotate flow sensor and clip into bracket

Fig. 11 – Flow Sensor Install

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## START-UP AND OPERATION

### Step 1 —Checking Air Purifier Operation

#### **WARNING**

##### **ELECTRICAL SHOCK AND HIGH VOLTAGE HAZARD**

Failure to follow this warning could result in personal injury or death.

Before installing or servicing system, always turn off main power to system. There may be more than one (1) disconnect switch.

- Attach the Perfect Air™ Air Purifier door to the cabinet. A magnet in the door (see Fig. 8) is used to activate a safety switch in the power supply when the door is installed. The power supply will not energize the air purifier unless the safety switch is activated.
- Turn the HVAC system power on and adjust the thermostat or Evolution™ System Control to activate the system fan.
- Turn the Perfect Air™ Air Purifier power switch to on position.
- The power indicator light above the Air Purifier power switch should illuminate (see Fig. 13).
- Check to ensure the light goes off when the Perfect Air™ Air Purifier power switch is set to off, when the blower goes off, or when the HVAC system power is turned off.

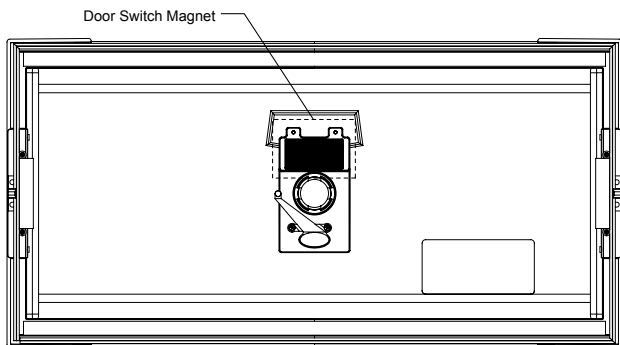
**NOTE:** Upon power-up, the light will come on for approximately 5 seconds and if no flow is detected, it will go off. If no air purifier cartridge is detected, the flow sensor will detect this and turn off after approximately 7 seconds.

### Step 2 —Evolution Control

- When the Perfect Air™ Air Purifier is used with an Evolution Control, the Evolution Control can be configured to remind the homeowner when it is time to change the Perfect Air™ Air Purifier cartridge. This maintenance reminder can be based on either the TrueSense™ dirty filter algorithm or time. The installer should use their discretion to select the most appropriate option based on the initial system static pressure.

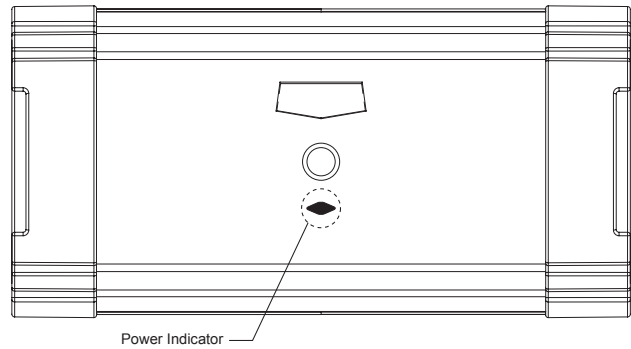
### Step 3 —Maximizing Performance

- Maximum air purification performance is obtained when the furnace blower is set for continuous operation on the thermostat or Evolution Control.



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**Fig. 12 – Door Switch Magnet**



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**Fig. 13 – Power Indicator**

## MAINTENANCE

The Perfect Air™ Air Purifier is designed to require minimal maintenance. Maintenance is limited to the replacement of the air purification cartridge and inspection/brush cleaning of the ionization array. Frequency of air purifier cartridge replacement and cleaning of the ionization array may vary depending on ductwork design and local environmental conditions.

**To replace the air purifier cartridge, complete the following steps:**

**Step 1 —Turn the heating and cooling system power off.**

#### **WARNING**

##### **ELECTRICAL SHOCK AND HIGH VOLTAGE HAZARD**

Failure to follow this warning could result in personal injury or death.

Before installing or servicing system, always turn off main power to system. There may be more than one (1) disconnect switch.

**Step 2 —Turn the Perfect Air™ Air Purifier switch to the off position.**

**Step 3 —Remove the Perfect Air™ Air Purifier door.**

**Step 4 —Slide out the old air purifier cartridge and discard.**

**Step 5 —Install the new air purifier cartridge.**

**NOTE:** Make sure that the arrows on the air purifier cartridge point toward the fan coil. This should be in the same direction as airflow.

**Step 6 —Replace the Perfect Air™ Air Purifier door.**

**Step 7 —Turn the Perfect Air™ Air Purifier switch to the on position.**

**Step 8 —Turn heating and cooling system power on.**

At the time of air purifier cartridge replacement, if a powdery residue is noticed on the tips of the points in the ionization array, proceed to clean them by completing the following steps:

**Step 1** —Turn the heating and cooling system power off.

## ⚠ WARNING

### ELECTRICAL SHOCK AND HIGH VOLTAGE HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing or servicing system, always turn off main power to system. There may be more than one (1) disconnect switch.

**Step 2** —Turn the Perfect Air™ Air Purifier switch to the off position.

**Step 3** —Remove the Perfect Air™ Air Purifier door.

**Step 4** —Unplug the power cord and flow sensor cable (if connected) from the enhancement module 9 ( See Fig. 7 and 8)

**Step 5** —Slide out the enhancement module assembly and safety screen.



## WARNING

### CUT HAZARD

Failure to follow this caution may result in personal injury.

Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing and gloves when handling parts.

**Step 6** —Slide out the Safety Screen and set aside.

**NOTE:** Best cleaning tools: 5 inch handle paint brush with 2 inch width (or greater) brush point (synthetic or natural bristle) (See Fig. 14) or vacuum cleaner with brush attachment.

**Step 7** —Gently stroke the ionization pins on the top plane of each bar with enough brush depth to hit front and back tips of the points in the ionization array. Use a gentle back and forth brushing motion to clean any small accumulations from the tips of the points. If desired, use vacuum cleaner with brush attachment to gently vacuum the frame and components of enhancement module.

**Step 8** —Reinstall the Safety Screen.

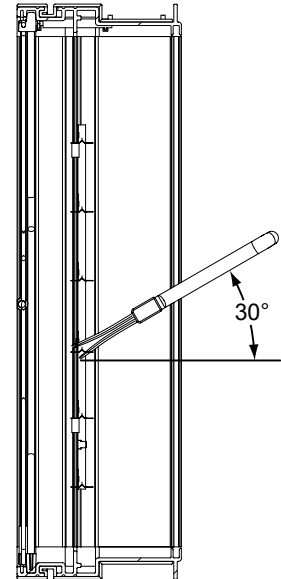
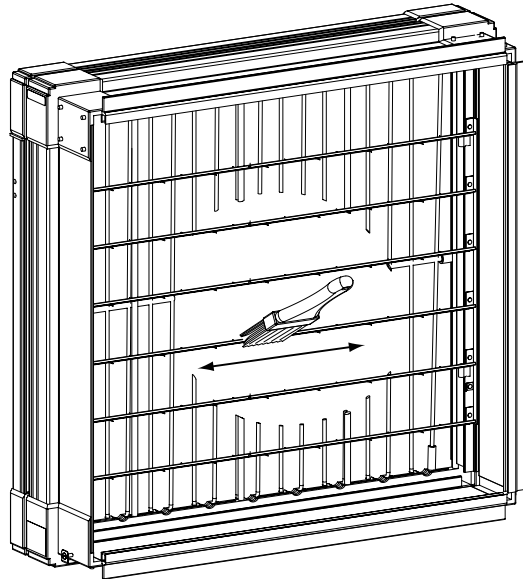
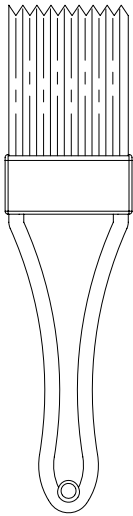
**Step 9** —Slide in enhancement module.

**Step 10** —Reconnect the power cord and flow sensor cable.

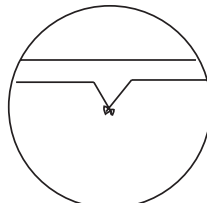
**Step 11** — Replace the Perfect Air™ Air Purifier Door

**Step 12** —Turn the Perfect Air™ Air Purifier switch to the on position.

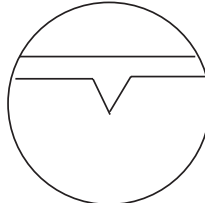
**Step 13** —Turn heating and cooling system power on.



**POINTS ARE SHARP! BE VERY CAREFUL DURING CLEANING.**



Tip of point with residue



Tip of point after cleaning

**Fig. 14 – Removal of Deposits from Ionization Pins**

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## TROUBLESHOOTING

### CAUTION

#### SAFETY HAZARD

Failure to follow this caution may result in personal injury or equipment damage.

The following instructions are for use by qualified personnel only.

### WARNING

#### ELECTRICAL SHOCK AND HIGH VOLTAGE HAZARD

Failure to follow this warning could result in personal injury or death.

The following procedures will expose electrical components. Disconnect power between checks and proceed carefully.

The Perfect Air™ Air Purifier is equipped with a power indicator light located on the door (see Fig. 13). This power indicator light will illuminate when the Perfect Air™ Air Purifier door is installed, the power switch is in the on position, AND the fan coil blower is running and airflow is sensed. If the power indicator light is not illuminated, follow the troubleshooting steps below.

**Step 1** —Check that the Perfect Air™ Air Purifier door is installed.

**NOTE:** A magnet in the door (see Fig. 8) is used to activate a safety switch in the power supply when the door is installed. The power supply will not energize the air purifier unless the safety switch is activated.

**Step 2** —Check that the Perfect Air™ Air Purifier power switch is in the on (closed) position.

**Step 3** —Confirm that the fan coil blower is operating.

**Step 4** —Confirm that 208/230 VAC power is provided. Attach power supply connector to the air purifier when the fan coil blower is operating.

**NOTE:** Even though power is supplied to the Perfect Air™ Air Purifier, it will not turn on unless the airflow sensor senses airflow or the airflow sensor's bypass plug is inserted.

**Step 5** —Confirm that the airflow sensor cable or airflow sensor bypass plug is connected to the power supply (See Fig. 7).

**Step 6** —If still not functioning, disconnect the airflow sensor cable and the power cord from the power supply.

Remove the enhancement module from the air purifier cabinet and inspect the airflow sensor (See Fig. 11).

Confirm the airflow sensor is properly seated in its bracket and the airflow sensor cable is connected to the back of the sensor. Replace the enhancement module.

**Step 7** —Reconnect the power cord to the power supply and insert the airflow sensor disable jumper (from parts bag).

If the power indicator light illuminates, then replace the airflow sensor.

Install the door onto the air purifier and turn the power switch to the "ON" position.

**Step 8** —If all of the above steps are completed and the power indicator light is still not illuminating, replace the power supply on the enhancement module. Note that there are no serviceable parts within the power supply.

# SPECIFICATIONS AND DIMENSIONS

Table 1—Specifications and Dimensions

Specifications	GAPABXBB1620	GAPABXBB2020	GAPABXBB2420
Color	Taupe Metallic	Taupe Metallic	Taupe Metallic
Cabinet Material	20 Ga. Powder Coated Steel	20 Ga. Powder Coated Steel	20 Ga. Powder Coated Steel
Electrical	208/230v/60Hz	208/230v/60Hz	208/230v/60Hz
Maximum Airflow (CFM)	1350	1800	2000
Efficiency	Equivalent to MERV 15	Equivalent to MERV 15	Equivalent to MERV 15
Replacement Cartridge	GAPCBBAR1620	GAPCBBAR2020	GAPCBBAR2420
Initial Pressure Drop (in w.c.) (at maximum airflow)	.22	.25	.22

Dimensions	GAPABXBB1620	GAPABXBB2020	GAPABXBB2420
A	18-1/2	22	25-1/2
B	15-1/8	18-5/8	22-1/8
C	13-1/8	13-1/8	13-1/8
D	17-5/8	21-1/8	24-5/8
E	19-3/4	19-3/4	19-3/4
F	22-1/4	22-1/4	22-1/4
G	11-1/4	11-1/4	11-1/4

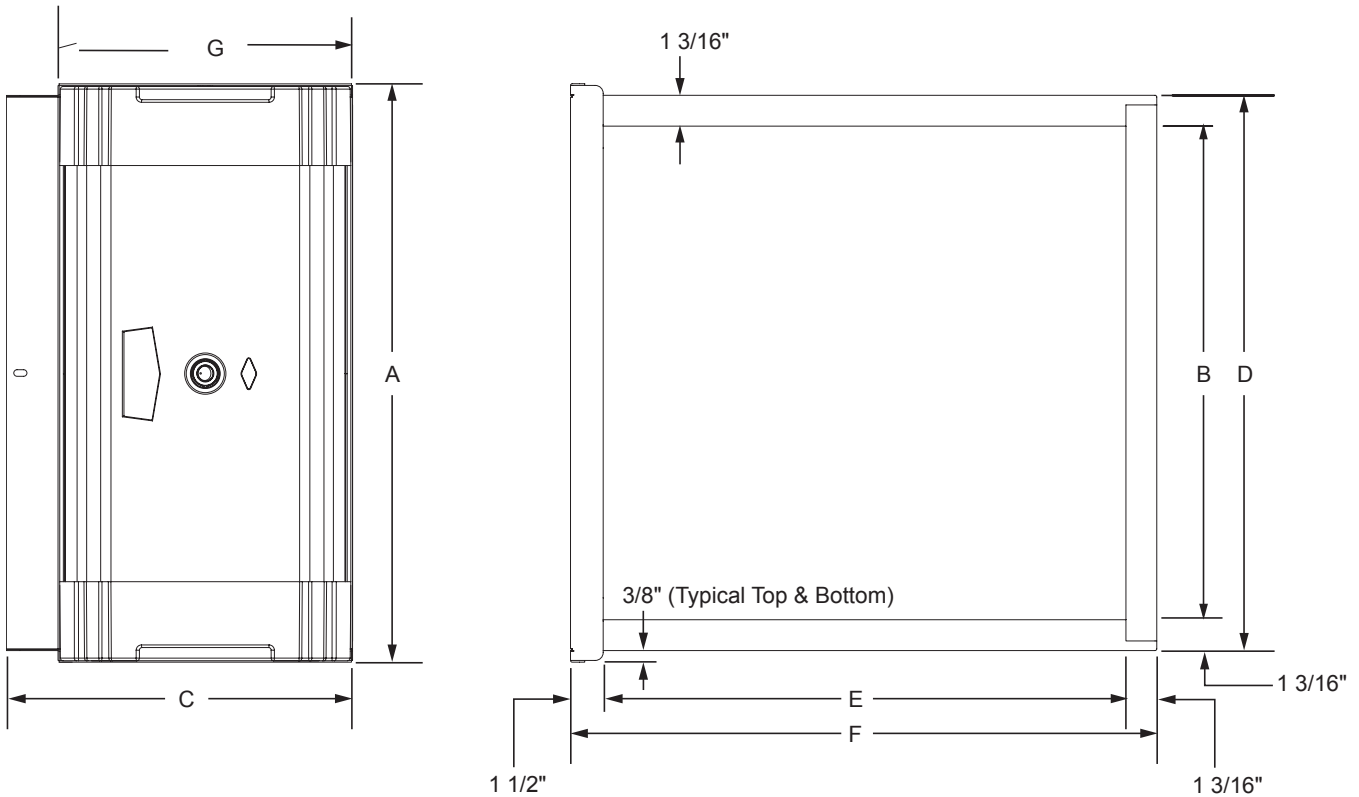


Fig. 15 – Dimensions

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## WARRANTY

### FOR SERVICE OR REPAIR, FOLLOW THESE STEPS IN ORDER:

**FIRST:** Contact the installer. You may find their name on the product or in your Homeowner's Packet. If the installer's name is not known, call your builder or home retailer if yours is a new residence.

**SECOND:** Contact the nearest distributor. (See telephone yellow pages.)

**THIRD:** Contact:

Bryant Heating and Cooling Systems

Consumer Relations

P.O. Box 4808

Syracuse, New York 13221

Telephone: 1-800-428-4326

Model No. \_\_\_\_\_

Unit Serial No. \_\_\_\_\_

Date of Installation \_\_\_\_\_

Installed by \_\_\_\_\_

Name of Owner \_\_\_\_\_

Address of Installation \_\_\_\_\_

\_\_\_\_\_

GAPAB

### PERFECT AIR™ AIR PURIFIERS

**FIVE-YEAR LIMITED WARRANTY**--- Bryant Heating & Cooling Systems (herein after referred to as 'Company') warrants this product to be free from defects in material and workmanship. If a defect is found within five years from the date of original installation of the product (whether or not actual use begins on that date) Company will provide a new or remanufactured part, at Company's sole option, to replace any defective part, without charge for the part itself.

This warranty does not include labor or other costs incurred for diagnosing, repairing, removing, installing, shipping, servicing or handling of either defective parts, or replacement parts, or new units.

#### WARRANTY CONDITIONS:

1. Warranties apply only to products in their original installation location.
2. Installation, use, care, and maintenance must be normal and in accordance with instructions contained in the Owner's Manual and Company's service information.
3. Defective parts must be returned to the distributor through a registered servicing dealer for credit.
4. All work shall be performed during normal working hours.

**LIMITATIONS OF WARRANTIES – ALL IMPLIED WARRANTIES AND/OR CONDITIONS (INCLUDING IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) ARE HEREBY LIMITED IN DURATION TO THE PERIOD FOR WHICH THE LIMITED WARRANTY OR CONDITION IS GIVEN AND APPLIES. SOME STATES OR PROVINCES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY OR CONDITION LASTS. SO THE ABOVE MAY NOT APPLY TO YOU. THE EXPRESSED WARRANTIES MADE IN THIS WARRANTY ARE EXCLUSIVE AND MAY NOT BE ALTERED, ENLARGED, OR CHANGED BY ANY DISTRIBUTOR, DEALER, OR OTHER PERSON, WHATSOEVER.**

#### **BRYANT WILL NOT BE RESPONSIBLE FOR:**

1. Normal maintenance as outlined in the installation and servicing instructions or owner's manual including coil cleaning, filter cleaning and/or replacement and lubrication.
2. Damage or repairs required as a consequence of faulty installation, misapplication, abuse, improper servicing, unauthorized alteration, or improper operation.
3. Failure to start due to voltage conditions, blown fuses, open circuit breakers or other damages due to the inadequacy or interruption of electrical service.
4. Damage as a result of floods, winds, fires, lightning, accidents, corrosive environments, or other conditions beyond the control of Company.
5. Parts not supplied or designated by BRYANT, or damages resulting from their use.
6. Company products installed outside the continental U.S.A., Alaska, Hawaii, and Canada.
7. Electricity or fuel costs or increases in electricity or fuel costs from any reason whatsoever including additional or unusual use of supplemental electric heat.
8. **ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL PROPERTY OR COMMERCIAL DAMAGE OF ANY NATURE WHATSOEVER.** Some states do not allow the exclusion of incidental or consequential damages, so the above limitation may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

Catalog No. 39004DP317

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